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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,956	11/24/2003	Georg Weber	588.1004	1215
23280	7590	03/10/2005	EXAMINER	
DAVIDSON, DAVIDSON & KAPPEL, LLC 485 SEVENTH AVENUE, 14TH FLOOR NEW YORK, NY 10018			SAYOC, EMMANUEL	
			ART UNIT	PAPER NUMBER
			3746	

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/722,956

Applicant(s)

WEBER ET AL.

Examiner

Emmanuel Sayoc

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/11/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title should refer to at least the principle inventive concept of the claimed invention.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-18, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 14, the phrase "in pot-shaped form or the housing cover or the sealing plate" is unclear as to what is pot shaped. Applicant is instructed to rephrase the claim for clarity.

Claim 23, recites the limitation "housing sealing cover sealing devices " in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kuhn et al. (U.S. 6,250,204 B1).

With respect to claim 1, Kuhn et al. teaches a compressor with an intake (39') and a discharge chamber (39) for a suction pressure zone and a discharge pressure zone. The compressor comprises a housing (3), a housing sealing cover (valve plate 37 seals housing 3), a drive shaft (15) including bearings (19), a drive mechanism (21, 25) for reciprocating pistons (27) and converting the rotational movement of the drive shaft (15) into a reciprocating movement of the pistons (27), a cylinder block (35) for aspirating and compressing a fluid through the reciprocating movement of the pistons (27), a valve device (133), and a cylinder head (7). The cylinder head at least partially forms the intake (39') and discharge chambers (39), and the cylinder head (7) is a separate element from the housing (3). The housing (3) is of pot-shaped form (in that a pot has outer walls forming an inner chamber).

6. Claims 1, 3, 4, 7, 9, 14, 15, 18-21, 23, 24, and 26-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Atsugi et al. (U.S. 3,557,664).

With respect to claims 1, and 15, Atsugi et al. teaches a compressor with an intake (22) and a discharge chamber (25) for a suction pressure zone and a discharge pressure zone. The compressor comprises a housing (11, 19), a housing sealing cover (21), a drive shaft (15) including bearings (shown not enumerated), a drive mechanism (14) for reciprocating pistons (13) and converting the rotational movement of the drive shaft (15) into a reciprocating movement of the pistons (13), a cylinder block (cylinder assembly 12 including all cylinders) for aspirating and compressing a fluid through the reciprocating movement of the pistons (13), a valve device (inherently within valve plates 16, 17), and a cylinder head 20). The cylinder head (20) at least partially forms the intake (22) and discharge chambers (25). It is inherent that there is an intake (22) and discharge chamber (25) in the head (20). The cylinder head (20) is a separate element from the housing (11). The housing (11, 19) is of pot-shaped form (in that a pot has outer walls forming an inner chamber).

With respect to claim 3, the housing (11, 19) is designed as a thin-walled tube (11) and the housing sealing cover (21) is a sheet metal pot having a wall thicker (see thicker portions) than the housing (11, 19).

With respect to claim 4, a bottom of the housing cover (21) is elastically deformable (metal is relatively deformable) so that in one area a contact force acts on the cylinder head (about 39) and clamps the cylinder head between the valve device (within 17) and the housing cover (21).

With respect to claim 7, the cylinder head has circumferential sealing webs (see walls defining suction and discharge chambers) pressed against the valve (17) device

by a bottom of the housing cover (21). The examiner takes official notice that it was well known in the art to provide elastic seals at the junction of these walls and the valve device (17), thus constituting the housing cover bottom being elastic.

With respect to claim 9, the housing cover (21) walls that engage the valve plate (17) constitute mounting devices.

With respect to claim 14, the Atsugi compressor is capable of being used as a motor vehicle air conditioner compressor, as taught in column 1 lines 5-40.

With respect to claim 18, the cylinder head (20) constitutes an insert between the valve plate (17) and the housing cover (21).

With respect to claim 20, the housing (11) is closed from the outside in an area of the cylinder block (cylinder assembly 12 including all cylinders) and the valve device (17). In this area, the housing is free of divisions, and sealing devices to the outside area.

With respect to claim 21, the compressor has a drive area (see motor section) and a high-pressure zone (discharge chambers), the compressor further comprising a seal (valve palates 16, 17 constitute seals) for the drive area. The housing sealing cover (21) and the seal of the drive area (17) being situated toward an environment (left) on a side of the compressor opposite the high pressure zone since there is a high pressure zone on the right side of the compressor.

With respect to claim 23 and 24, the housing (11) and housing sealing cover sealing devices (17) are situated on a side of the compressor opposite a greatest heat

source, which in the application taught is the internal combustion engine of the vehicle.

The valve plate (17) constitutes a flanged joint.

With respect to claim 26 and 28, the device further comprises a spacer (walls in 19) separating the intake pressure zone and the discharge pressure zone (suction and discharge chambers) within the housing bottom (19), the cylinder block (12 and plural cylinder assembly) and the valve device (16, or 17) being supported against the housing bottom by the wall spacer. The wall spacers are integrated into the housing bottom (19).

With respect to claim 27, the bottom (19) further comprises a second spacer (see plural walls) separating the discharge pressure zone (discharge pressure) and the drive area pressure zone (suction chamber) within the housing bottom (49).

With respect to claim 29, and 30, the Atsugi compressor is capable of being used as a motor vehicle air conditioner compressor, as taught in column 1 lines 5-40. The valve device (16 or 17) is a valve plate with a suction and discharge valve.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 2, 5, 6, 9-13, 16, 17, 22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsugi, as applied to claims 1, 4, 19, and 21, and in further view of Black (U.S. 4,065,229).

With respect to claims 5, 6, 9, and 10, Atsugi sets forth a device as described above, which is substantially analogous to the claimed invention. The Atsugi device differs from the claimed invention in that there is no explicit teaching a sealing plate being pressed against the cylinder head using a threaded ring or being screwed to the housing. The head cover (21) constitutes a sealing plate. Black in Figure 1, teaches a compressor with a sealing plate or cover (15) that is screwed into the compressor housing using threads (11). Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the Atsugi device by incorporating a threaded connection between the housing cover (Atsugi 21) and the housing (Atsugi 11), as taught by Black, in order to allow ease in compressor assembly without the need for further fastening components such as bolts. In the combination, the threads on the cover constitute internal threads in that they are internal to the

housing (Atsugi 11). The sealing plate or cover (21) is pressed against the cylinder head (20) as seen in Atsugi Figure 1.

With respect to claim 2, 16, and 17, the examiner takes official notice that it was well known to make compressor housings, and cylinder heads, out of steel, and particularly, aluminum due to the materials lightness, durability, and high thermal conductivity.

With respect to claim 11, the housing (Atsugi 11) is a thin tube and has threads (as in the combination above) and a stepped flange (about the junction of cover 21 and housing 11) that supports the cover (21) on the housing (11) when fully engaged, constituting a stress-reducing structure reducing stress on the threads.

With respect claim 12, and forging or extrusion, in MPEP 2173, Product-by-Process Claims, the determination of patentability is based on the product itself (not the process). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior-art, the claim is unpatentable even though the prior-art product was made by a different process.

With respect to claim 13, the examiner takes official notice that placing protruding tabs with eye holes for bolts or fasteners on compressor housings and covers was well known in the art of compressor mounting at the time the invention was made.

With respect to claim 22, the examiner takes official notice that the use of gaskets was well known in the art to join compressor components, such as a housing cover and valve plate, or a shaft to the housing, in sealing arrangement.

With respect to claim 25, a shaft lead-through to the outside (outside of motor area), the shaft bearings (left side bearings), and shaft gaskets (as stated above) are situated in an area of the housing sealing cover (21).

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atsugi, as applied to claim 1, and in further view of Ban et al. (U.S. 6,247,322).

With respect to claim 8, Atsugi teaches pressure conduits (26, 27) attached to the housing cover (21). Using solenoid valves in pressure conduits was well known in the art at the time the invention was made to regulate fluid flow in and out of the compressor using electronic control. Ban et al., in Figure 3, teach a similar piston compressor where solenoid valves (183, 187) are placed in suction and discharge pressure conduits in a housing cover. Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the Atsugi device by incorporating solenoid valves in the pressure conduits, as taught by Ban et al., in order to regulate fluid flow in and out of the compressor using electronic control.

With respect to the process of welding, in MPEP 2173, Product-by-Process Claims, the determination of patentability is based on the product itself (not the process). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior-art, the claim is unpatentable even though the prior-art product was made by a different process.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to piston compressors.

U.S. Pat. 5,127,314 to Swain

U.S. Pat. 4,789,311 to Ikeda et al.

U.S. Pat. 4,544,332 to Shibuya

U.S. Pat. 4,683,803 to Miller et al.

U.S. Pat. 3,312,169 to Schultz

U.S. Pat. 3,712,759 to Olson Jr.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Sayoc whose telephone number is (571) 272 4832. The examiner can normally be reached on M-F 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Emmanuel Sayoc
Examiner
Art Unit 3746


CHERYL TYLER
SUPERVISORY PATENT EXAMINE

ECS